Operating instructions

Oyster Digital CI

CARO Digital CI

Cosmo Digital CI

including the options HD and DVB-T

Date: November 2006
Software version EU/2.02

Proper use and operation

This product has been designed for use in a fixed installation on mobile homes or camper trailers with maximum speeds of 130 km/h. It is designed to automatically aim a parabolic antenna mounted on a stationary vehicle at geostationary television satellites transmitting directly to Europe. The power to the system is supplied by a standard vehicle electric system with a rated voltage of 12 or 24 Volt. For installations where a connection to the vehicle's electrical system is provided, a suitable 230-Volt to 12-Volt power converter must be used.

Use of the equipment for any other purpose than the one specified is not permitted.

Please also note the following instructions from the manufacturer:

- It is not permitted to change the overall device by removing or adding individual components.
- It is not permitted to use other parabolic antennas or LNBs than those installed originally at the equipment.
- Installation must only be performed by sufficiently qualified personnel. All instructions in the supplied Installation Instructions, which form part of the Operating Instructions, must be carefully followed.
- All of the relevant and approved guidelines of the automotive industry must be observed and complied with.
- The equipment must only be installed on hard vehicle roofs which are sufficiently strong and inherently stable.
- No regular maintenance is required for the product. All housings and enclosures must not be opened. Always ask a qualified professional to carry out any maintenance work.
- In the event of any problems, or if you are unsure about anything, please contact the manufacturer directly or a specialist workshop which is approved by the manufacturer.

Safety information

To avoid the risk of fire or damage to the device the receiver must never be exposed to moisture or rain.

Should an item or liquid get into the housing, immediately disconnect the device from the power supply and have it checked by a qualified professional before further usage.

Place the receiver in a place with **sufficient air circulation** and **away from any heat sources**. This will prevent heat accumulation inside the receiver and ensures a longer lifecycle.

Do not place any items on the receiver – malfunctions, damage and even self-ignition may occur if the ventilation openings are blocked.

Should you ever notice an unusual smell or smoke, immediately disconnect the device from the power supply and have it checked by a qualified professional.

Switch off the receiver before connecting other devices.

The power supply line to the receiver must have a cross-section of 2.5 to 4.00 mm² and must be connected **directly to the vehicle battery**. Ensure that the device is not connected to an electronic charge controller.

Keep a sufficient distance to potential sources of interference such as mobile phones, electronic heater controllers, igniter components or radio devices when routing the lines and positioning the components.

It is recommended that you ground your television set in the vehicle to avoid interference on your television set or satellite receiver. Only connect the freely accessible ground of your television set to the vehicle chassis.

Only use the wiring harnesses supplied or the extension wiring harnesses available as accessories to connect the antenna unit.

The driver of the vehicle must inspect the antenna unit before driving off to ensure that the antenna is fully retracted.

The automatic retraction of the antenna after switching on the ignition or starting the engine may take up to 30 seconds. Do not move the vehicle during this period!
The antenna can only be retracted when the master switch at the receiver is set to ON (or 'I') and the receiver is connected to a power source. Automatic retraction may be prevented by technical defects of the vehicle or the antenna system. Ensure that the antenna is fully retracted before driving off!

Ensure that the system is installed in your vehicle in accordance with the Installation Instructions provided or have the correct installation confirmed by the installer.

Please note that different legal requirements may apply to the operation of electrical and electronic equipment in different countries. As the user of this equipment, you yourself are responsible for ensuring compliance with the relevant laws and regulations.

In case you are not familiar with the applicable legal regulations, we recommend that you fully disconnect the satellite system from the power supply by turning off the master switch of the receiver in order to avoid violating any applicable laws.

Keep in mind that all parts of this system may be dangerous to children. The swallowing of small parts such as batteries can be fatal! Never leave children unattended in the vicinity of the system or its components. Ensure that there are no persons within the operating radius of the antenna when it is operated.

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Introduction

These instructions describe the functions of your digital CI satellite system, including the options "HD" and "DVB-T" (abbreviated "+T" in the following). Optional functions are identified accordingly.

Your ten Haaft digital satellite-reception system is an intelligent and fully automatic system that does not require any of the manual adjustments associated with conventional systems.

Unlike normal television antennas for terrestrial reception, a satellite antenna must be precisely aimed southward into the satellite's signal beam. This signal beam must not be interrupted by trees or other obstacles, as this will prevent reception.

Please ensure that the system always has a clear view to the south. If the signal is blocked – for example by a tree – it is quite possible that a good satellite signal may be received without any problems in a position just a few meters away. In Scandinavia, even mountains in the far distance can interrupt the satellite signal.

Oyster Digital only

To allow reception even under such adverse conditions, the antenna unit of the Oyster Digital system can be removed from the vehicle top and be set up near the vehicle in a position where a signal can be received. This requires a special pedestal and an extension cable which are available as an optional "ground kit".

Satellite systems installed on buildings must usually only be adjusted once. By contrast, a mobile system will need to be readjusted even if it is moved only a few centimetres. Owners of a ten Haaft satellite system can perform this adjustment at the push of a button.

Our digital CI satellite systems stand for exceptional operating convenience and a multitude of channels. At the touch of a button, the system opens and searches for receivable satellites. The micro-processor

controlled fine-tuning and the digital receiver technology ensure the best possible picture quality, providing you with immediate access via your remote control to the full range of TV and radio programs broadcast by the new digital satellites. You can even adjust the volume of your television set with the satellite system's remote control. This eliminates the inconvenient handling of two remote controls.

To further enhance the operating convenience, a new function has been implemented in your satellite system to allow the system to be switched off with the antenna remaining open. This eliminates the daily opening and retracting of the antenna when staying in one location for several days without having to dispense with the extremely efficient power-saving stand-by mode.

The first few pages of these instructions explain the general functions of the receiver and are followed by an explanation of all the functions specific to the satellite system and the search functions.

Your digital CI satellite system can receive unencrypted "Free-To-Air" (FTA) programs, but also encrypted (encoded) programs. The integrated "Common Interface" (CI) accepts decoder modules for the various different encryption methods. It can hence receive encrypted (pay-TV) channels, provided that you have procured the corresponding decoder module and valid "conditional access" smart card. For further information please refer to section "Common Interface" on page 23.

4.4.2 After unpacking

Check the delivery scope of the digital CI satellite system. Your system is supplied with the following parts:

CI receiver, optionally with "HD" and "+T2" feature

Antenna unit

Parabolic antenna

Mounting plate

Fasteners package

Wiring harness

Satellite mouse

Remote control

2 batteries (LR03, size AAA)

Operating instructions (which are currently reading)

Installation instructions

Quick reference

Information about disposal of packaging

All packaging and packaging materials can be recycled. Please observe the applicable legislation in your country governing recycling and your duty to dispose of recyclable waste in the proper way.

Keep packaging materials like plastic bags away from children. Danger of suffocation!

Cardboard and other packaging material may have sharp edges and cause injuries. Take appropriate measures to protect yourself and other persons from injuries.

Connection of the system

The following connections must be made at the receiver before initial operation:

TV (Scart)	Using a SCART cable, connect the TV port of the receiver to your television set.
SAT IN	Connect the provided white coaxial antenna cable from the antenna unit to this port.
DVB-T IN	If the "+T" option is included, connect here the cable from your terrestrial antenna (not included).
12-24V	Connect the power supply cable from the vehicle battery to this port.
ANTENNA CONTROL	Connect the control cable from the antenna unit to this port.
SAT MOUSE	Plug in here the satellite mouse.

Your digital CI receiver has various other connections for optional features:

TV OUT (antenna)	Antenna signal output for TV sets. (Default setting: UHF channel 32, audio standard B/G)
CVBS	Composite video output (FBAS). This port can be used e.g. with a 3-way Cinch cable together with the audio output AUDIO R/L.
AUDIO R/L	For the connection of e.g. your car stereo system or active speakers. At this port a TV set or flat-panel display can be connected in conjunction with the CVBS output.

SPDIF	Digital audio output. Connect this output to a digital audio input of an amplifier. A shielded coaxial cable must be used to ensure an interference-free function. Depending on the programs supplied by the stations and the receiver settings, this port can provide e.g. Dolby 5.1, AC-3 or dts signals.
Y/C	SVIDEO or SVHS output. If your flat-panel display provides the corresponding input port, this signal may be used instead of the CVBS signal for enhanced picture quality.
Y/G U/B V/R	These ports provide either a RGB signal or a YUV composite signal. Depending on the input ports available at your TV set, these signals provide the best possible picture quality. The selection of RGB/YUV is made in the set-up menu of the receiver.
SAT OUT	The signal supplied to the SAT IN port is looped through to this port when the receiver is switched on. Not all models feature this port.
DVB-T OUT	The signal supplied to the DVB-T IN port is looped through to this port when the receiver is switched on. Not all models feature this port.
HD	A USB 2.0 cable can be connected to models with the "HD" option to provide a link to your personal computer. This connection can be used to transfer recorded programs to your computer.
RS232	The RS232 data port can be used to connect a computer and to load current channel lists or software.

Operation of the receiver

The receiver is ready for operation when the master switch on the rear side is in position "I". If the switch is in position "0" the satellite system is completely disconnected from its power supply.

For normal TV operation the following functions can be selected with the remote control:

⏻	Satellite system on and off (stand-by). The antenna retracts when system is switched off. In this stand-by mode, timer programs are not monitored.
MUTE 🔇	If this button is pressed for more than 3 seconds, the satellite system switches into stand-by mode WITHOUT retracting the antenna (sleep mode). If the timer is programmed, the sleep function will set the timer into stand-by mode. A short press mutes the sound or turns it back on.
P+/CH▲ P-/CH▼	Change to the previous or next channel in the channel list. These keys are also used to navigate within menus or lists.
TV RADIO	Change between TV and radio mode. In TV mode, the antenna will move into the position of the last known reception if no satellite signal is received while the key is pressed.
+/VOL▶ –/VOL◀	Volume up/down. These keys are also used to navigate within menus or to scroll the pages of lists.
MENU	Opens the settings menu for the current program and the system menu. Press MENU again to directly open the main menu.

OK	Display of the status bar. Confirms, opens or edits the currently active item. Hides help functions when in PVR mode (optional).
EXIT	Use EXIT in all menus to exit the menu. Outside of menus, this key activates the channel list.
INFO	Displays the EPG. A single press will display information about the current program, a second press opens a list with a program overview for the whole day.
LIST	Activates either the TV or radio channel list, depending on operating mode. Can be used within the EPG to directly program the timer.
SWAP	Change back to the last selected channel. Use SWAP to toggle between the windows in multiple-window menus.
AV	Deactivation of internal LNB voltage supply and loop-through of satellite signal from SAT IN to SAT OUT (if SAT OUT port is fitted). To be used with a second receiver connected to the SAT OUT socket. The loop-through of video signals is not intended.
TEXT	Display of the videotext decoder and display of the videotext on screen.
PAUSE	Still picture. The picture is frozen (stopped) and will be continued by pressing the key again.
PVR	Starts the optional Personal Video Recorder (PVR) for the recording and playback of programs to and from the internal hard disk.
(yellow)	Direct access to the DVB-T mobile search (only with "+T" model).

Operation without remote control

The two keys on the satellite mouse allow the following basic functions of the receiver to be controlled without the remote control:

▲	Change to the next channel in the channel list.
▼	Change to the previous channel in the channel list.
▲ / ▼	Pressing both keys briefly at the same time toggles between RADIO and TV mode. **Pressing both keys longer will cause the antenna to retract und the system to switch off. This corresponds to pressing the red stand-by key (ON/OFF) on the remote control.** **When in stand-by mode, a brief press on both keys switches the system back on.**

Another control element is the **master switch** on the front of the receiver. In position "0" or "OFF" the complete system is disconnected from the vehicle's power supply. The switch must be in position "I" or "ON" for the system to operate.

The antenna will only retract automatically by command of the control line (terminal 15/ignition) if the master switch is set to "I" or "ON".

Should the system no longer respond to commands, set the master switch to "0" for approx. 10 seconds and then back to "I" to reboot the operating software of the receiver.

Remote control

For a comprehensive explanation of the keys please refer to page 11.

⏻: Switches the system on or off. Opens/retracts antenna.

TV: Activation of TV mode. Antenna moves into previous reception position if no picture is received.

AV: Activates the loop-trough of the satellite signal.

LIST: Display of program list

◀ -: Volume down. Changing of values in menus.

OK: Select or confirms functions.

INFO: Display of current program information (EPG).

PVR: Opens the control menu of the optional Personal Video Recorder.

🔇: Mute function of speakers and SLEEP function of system (press 3 sec to switch off the system WITHOUT retracting the antenna).

RADIO: Activation of radio mode

SWAP: Return to previously selected channel

EXIT: Closes on-screen menus

▶ +: Volume up. Changing of values in menus.

MENU: Display of on-screen menus

P+: Program up. ▲ upward in menus.

P-: Program down. ▼ downward in menus.

0..9: Number keys for direct channel selection

(yellow): Starts the DVB-T mobile scan (optional).

Menu functions

The receiver is operated via the remote control provided. The following keys are used to navigate within the on-screen menus:

MENU	Opens the quick-reference menu for the simple access to settings of the current channel and the functions of the satellite system. Press MENU again to open the main menu.
P+ / P- ▲ ▼	Moves the highlighted bar up or down one option.
+ / - ◀ ▶	Within lists: scrolls through the pages in the list. Within input fields: changes the set value.
OK	Opens, confirms or edits the highlighted item.
EXIT	Exits the active menu. Press EXIT repeatedly to exit all menus.
SWAP	Use SWAP to toggle between the windows.
EPG	Displays the EPG. Press once to display information about the current program. Press again to display a list with a program guide for the day.
LIST	Displays the channel list.
PVR	Displays the menu of the hard disk Personal Video Recorder (PVR, optional, see page 27.)

To access the satellite system's functions, press MENU once, then use P+/P- (CH▲/CH▼) to move the highlighted bar to "Oyster/CARO/Cosmo Digital" and then press OK.

For a comprehensive description of all of the satellite system's functions please see page 44 and following pages.

Basic settings

When the system is switched on for the first time, some adjustments may have to be made to the operating software. Proceed as follows:

1. Start the Main menu.	2 × MENU
2. Select the menu "Edit Settings" and then the sub-menu "General Options".	P+▲/P-▼ OK
3. Set your time zone. The setting e.g. for central Europe (CET) is: **+1:00. Daylight-saving time is set automatically if the "Summer time control" function for Europe is enabled**. To adjust the time, use the arrow buttons or enter the digit directly. Use LIST to toggle between plus and minus.	0 – 9 + / - LIST
4. Select your language.	+ / -
5. Press EXIT to exit the basic settings.	EXIT
6. Select "Save Settings". Press OK and wait until the menu disappears.	P+▲/P-▼ OK
7. Volume default setting: Set the volume of your TV set to minimum and that of your receiver to maximum. Now, increase the volume at the TV until a pleasant level is reached. Operate the receiver within the upper quarter of the volume range, if possible, to ensure an optimal sound quality.	+ / -

For a detailed description of all configuration options please refer to section "Receiver configuration" on page 33.

Channel selection

The receiver maintains an internal channel list. This list contains all channels of the activated satellites. The channels of deactivated satellites are not displayed.

There are several alternatives for selecting channels:

P+ / P– ▲ / ▼	Change to the previous or next channel in the channel list
TV RADIO	Change between TV and radio mode.
SWAP	Switch between current channel and the previous channel. The software stores as previous channel the channel that was last active for more than one second. You can therefore scroll through the list by quickly pressing P+ or P–. The channels only activated briefly in the process will not be stored by the SWAP function.
0 – 9	You can also select channels by pressing the number keys. In this case, you can shorten the input by pressing OK (if the channel number has just one digit) or cancel the input by pressing EXIT. To enter a number with less than four digits, you can complete the input by holding the key of the last number down. **Note:** By directly typing in numbers you can also select deactivated channels (see page 34). Do not start the direct entry of channel number with the number "0" as this will open the favourite channels list.

Channel list

The channel list can also be displayed directly:

LIST	Displays the complete channel list. Use the button P+ or P– to select a channel. Press OK to activate. Within the channel list, you can use the TV/RADIO key to toggle between the TV and the radio list.
EXIT	With the status bar hidden, press EXIT to display the channel list. To exit a list already displayed, press EXIT.
TV RADIO	Change between TV and radio list.
0 - 9	You can also directly input the channel number by pressing the number keys. In this case, you can shorten the input by pressing OK (if the channel number has just one digit) or cancel the input by pressing EXIT.
MENU	Opens a menu containing the options "Edit channels and Edit transponders" (see page 31). Use "EPG display" to activate a combined display of list and EPG. Option "Edit list" allows the sorting of the channel list (see page 36).
INFO	Activates/deactivates the combined list/EPG display.

While the channel list is displayed on screen with the EPG display deactivated, the satellite allocated to the highlighted channel is displayed in the lower right-hand corner of the screen.

DVB-compliant stations broadcast additional information about their programs, such as titles or details about current or upcoming programs. Some stations may even broadcast a program schedule for up to 64 days in advance. This service is currently e.g. provided by almost all German stations transmitting on Astra 1, usually with a preview period of approx. 5 days. The receiver automatically detects EPG data and provides the information available.

Please ensure that the correct local time is set in Main Menu → Edit Settings → Timezone (+1:00 for Central Europe, +0:00 for Great Britain), as otherwise wrong starting and end times of the programs will be displayed.

4.4.2 Status bar

Once you have selected a channel, the status bar will display the title and a brief description (if available) of the current program. For further information please start the EPG.

4.4.2 EPG

This is your Electronic Program Guide. The EPG comprises the following functions:

Details	Press the INFO key to display the EPG within the current program. Comprehensive information about the current program will be displayed.
Details of next program	Press + or – to display information about the next program.
Overview of day	Press INFO again to switch from the details display to the list display. This list contains all programs of the current day (from 6 a.m. until 6 a.m. of the following day). The title bar shows the date to which the program guide refers. On the right you will see the number of days for which information is available and which

	day you have selected. Use P+ / P- to scroll through the entries of the list, use +/- to scroll the pages. To switch to the following day, navigate to the end of the list and press P+ or +. To switch to the previous day, navigate to the beginning of the list and press P- or -. **Note:** If you have just selected a channel for the first time, the data in the list may still update while you navigate in it.
Overview of day details	To display details about a listed program, press OK to display the details screen. Within the details screen, press + or – to navigate to the next or previous program. Some stations provide very extensive detailed information which may not completely fit into the screen. In such cases, use P+/P- to scroll through the text.
LIST	Use LIST to copy the program currently shown in the EPG or the selected program into the timer. For further information please see page 24.

Please note that EPG information is always displayed in the language broadcast by the station.

Few stations do not broadcast any EPG information or only very brief EPG information without any additional details.

Selection of sub-channels (encrypted/audio channels)

When watching a multilingual program, press MENU to open a context menu and to select an audio channel with a different language.

The first menu item is "Bild-/Tonauswahl". Press OK to select this option and then select an audio channel from the list.

If the audio channels provide language identifiers, these will also be displayed.

4.4.2 Options channels

The German pay-TV channel "Premiere" for example transmits its optional channels (Sport and Premiere Direkt) in a process similar to the audio channels described above. To do this, Premiere provides so-called portal channels which form the basis from which the sub-channels can be selected.

To switch to these channels, first select the corresponding portal channel and then open the selection list via Menu → Bild- / Tonauswahl → OK. From the selection list, select an optional channel and accept it by pressing OK.

4.4.2 Radio stations

Astra 1 transmits several free-to-air radio programs on separate audio channels of a TV channel. This does not comply with the usual DVB-S procedure, but these channels can also be selected using the process described. The station names are also displayed in the audio channels list.

However, radio stations should rather be stored in a separate radio-stations list (RADIO key).

Teletext / Videotext

The digital CI receiver can directly decode and display teletext or videotext in case your television set or flat-panel display does not support this feature.

If the current station broadcasts correctly coded teletext, the option **Teletext** will appear in the context menu. Select this option and press OK. You may also activate the videotext directly by pressing TEXT.

TEXT	Activates the teletext. Press repeatedly to switch between the various display types.
0 – 9	Page number input (between 100 and 899)
P+/P–	Scrolls pages in increments of 1. Unstored pages are skipped.
+/–	Normal mode: volume control Sub-page mode: scrolling of sub-pages in increments of 1.
MUTE	Mutes the sound
OK	(De-)activates the sub-page mode. With the sub-page mode activated, a green **>** is displayed in the second line at the current sub-page.
MENU	Selects page 100
INFO/EPG	Reveals hidden text
SWAP	If pressed repeatedly: → zoom upper half → zoom lower half → normal mode → zoom upper half → ...
LIST	Hides teletext window until the selected page is loaded or new sub-pages are available. The teletext remains active in the background.
EXIT	Hides the teletext window. The teletext remains active in the background.
PAUSE	Stops the teletext, the page will no longer be updated. Press again to restart the update feature.

Common Interface (CI)

At the front of the device there are two slots for modules to decode encrypted programs.

To prevent damage only modules with the "PC Card" logo must be inserted. Any other modules may damage the receiver beyond repair.

Do not use excessive force to insert the modules. Rather pull the module back out of the slot and try inserting it again. Ensure that you insert the module with the correct side up.

Smartcards are sometimes printed in a confusing way as they are often designed to be used with other decoders. Most common-interface modules allow cards with the golden contacts facing upward. Before inserting a smartcard into the common-interface module, make sure that the usually gold-coloured contacts on the smartcard are clean and free of dust.

If a decoder module has been correctly identified, its name is displayed in the main menu under "Verschlüsselung" (Encryption). When you select the entry for this module in the list and press OK, a menu will be displayed based on the corresponding decoder module. Please contact the module manufacturer in case of any questions concerning the module. Note: Some modules only register completely and provide a menu system if a valid smartcard is inserted.

The keys OK and EXIT are used to navigate within the manufacturer-specific menus. If a menu does not respond to the OK or EXIT command, the dialog can be cancelled by pressing MENU. The receiver then interrupts the connection to the module's menu system.

Timer

The timer can manage up to 12 recording sessions. Either a defined recording date or individual days of the week can be selected.

To program sessions, select "Timer" from the main menu. The overview shows all dates of the 12 entries. Use the OK key to edit individual entries. To determine whether a fixed date or fixed weekdays are programmed in the timer, press the LIST key when in the date line. If a time before the starting time or identical to the starting time is set as end time, the recording will continue into the following day.

The correct function of the timer requires the internal clock to be set correctly. Check the time displayed in the status bar to verify.

To exit the timer settings, press EXIT at any time. If any setting has been changed or added, press OK to confirm the storing of the changes.

Programming programs from the EPG

Programs from the EPG can be directly copied into a free timer position by pressing LIST in the overview of the day or in the details window of the EPG. The timer menu then appears so that the new entry can be edited manually. Press EXIT twice to exit the settings dialog.

Timer recording – receivers without "HD" option

The timer is used to conveniently record programs on the hard disk (see page 27) at preset times. The timer function is also available on devices without optional hard disk. This function is particularly helpful if you want to be sure not to miss a program on a certain channel. The receiver will then switch over to the channel as programmed in the timer.

Timer and Stand-by

The timer is only active when the system is switched on or has been set to sleep mode with the antenna open (see page 2). The timer is inactive in stand-by mode. The antenna does never open automatically and without direct user control.

In sleep mode, the system checks whether there are timer programs that have to be processed. In this case, the sat mouse will show four vertical bars (| | | |), indicating that the system is in timer stand-by and is hence being controlled by the timer which will reactivate the system at the preset time. The power consumption in timer stand-by is higher than in regular stand-by.

Sleep-timer

The sleep-timer automatically switches off the system at a preset time. To activate the sleep-timer, select MENU → Main menu → Options → Sleeptimer.

In the configuration settings of the satellite system (see page 49), you can select whether the system shall retract completely when the sleep timer is active or whether it shall switch into the sleep mode with the antenna open.

The sleep-timer works completely independently of the regular timer.

Please note:

When your receiver is switched off by the sleep-timer, the TV set may remain on and hence consume power. Some TV sets switch off automatically if no video signal is received or are remote-controlled via the SCART cable. The digital CI receiver provides the corresponding control signals at its SCART port. Please refer to the operating manual of your TV set to determine the options.

Favourite channels list

Your digital CI receiver provides 9 freely programmable favourite channels lists. A favourite channels list is a selection of channels from the list of all channels. When a favourite channels list is activated, only the channels maintained in this list are available, all other channels will be suppressed. The possibility of creating up to 9 different favourite channels lists allows different system users to create personal lists without having to change the complete list of channels.

Creating favourite channels lists

The favourite channels lists are maintained under MENU → Main menu → Senderlisten (Channel lists) → Favoritenlisten (Favourite channels list). In this submenu, any channel from the complete channel list can be allocated to any of the 9 favourite channels list. For operation, observe the help text displayed at the bottom of the screen.

To exit the editing dialog of the favourite channels list, press EXIT two times. Changes must be confirmed with OK.

Using favourite channels lists

Start the selection menu of the favourite channels list by pressing the "0" key. Use P+/P- to select a list and confirm your selection with OK. Now, the channel list only provides the channels maintained in the selected favourite channels list.

To regain access to the full range of channels, press "0" again and select <keine> (none).

Please note that you can directly select any channel even if a favourite channels list is active (see page 16).

Hard disk recording (PVR, optional)

Recording and playback of programs via the integrated hard disk is performed in PVR mode (PVR – Personal Video Recorder).

To switch into PVR mode, press the PVR key. To return to normal receiver mode, press EXIT.

In PVR mode, a graphic is displayed in the upper left corner of the screen which shows symbols of all functions currently available. These can be selected via the number keys shown in the graphic.

Use the OK key to toggle between the different views of the PVR mode.

Use the +/– key to change the volume when in PVR mode.

Recording

Key	Symbol	Description
0		Starts the recording.
5		Starts the recording and stops the running video.
0		Stops the running recording.

Playback

Key	Symbol	Description
7		Displays the recordings overview. This overview shows all recorded programs for playback or deletion.
2		Starts the playback at the beginning of the currently running recording or changes from fast forward or rewind or pause back to normal playback.

1, 3		Fast Forward/Rewind. Accelerates the playback of the recording. By pressing key 1 or 3 multiple times, up to six speeds can be selected in either direction.
4, 6		Moves 5 minutes forward or backward within the recorded program.
5		Interrupts playback.
9	LIVE	Stops the playback of a recorded program and returns to the playback of the live program.
8		Stops playback and opens a menu with cutting functions.
LIST		Opens a list with index marks which can be either selected or directly activated by pressing OK.

The receiver can record and playback simultaneously and independently.

Only the currently selected channel can be recorded. At the same time, either a previously recorded program or, time-shifted, the current recording can be played back.

The status of the recording or playback is indicated by one or two status bars at the bottom of the screen. If neither recording nor playback is active, the status bar indicates "LIVE". During recording the status will indicate "REC" and the elapsed recording time. During playback the status bar will indicate "PLAY", "FF"(Fast Forward), "FR" (Fast Rewind) or "PAUSE". This status bar shows the current position within the recorded program in time format and by a progress bar. To the right of the progress bar, the total time of the recording is indicated unless the system plays back the running recording in time-shifted mode. The elapsed recording time of the running recording is shown in the "REC" line.

Multi-channel operation

During the recording of a program, other channels transmitted on the same transponder can be directly played back without interrupting the running recording. To view such channels while a program is being recorded, exit the PVR menu by pressing EXIT (the recording is continued in the background) and then press LIST. A channel list is displayed containing all channels available for selection.

One restriction may apply: When playing back or recording encrypted channels, the decoder module may not be able to decode two programs at the same time.

To stop the recording in the background, reactivate the PVR menu by pressing the PVR key.

PC connection (USB 2.0)

If the PVR menu is shown on screen but neither the playback nor the recording function is active, the hard disk can be controlled by a personal computer connected to the "HD" port (USB 2.0) by pressing key 8. This function must be confirmed by pressing OK. The computer will maintain control over the hard disk until the PVR key is pressed again. Press OK to confirm that the control of the hard disk is passed back to the receiver.
When the hard disk is controlled by a computer via the USB 2.0 port, programs stored on the hard disk can be downloaded if suitable software is installed.

The following software (examples) is suitable to download and edit recorded programs:

- DVR-Studio PRO (www.haenlein-software.de)
- DigeniusDiskX (www.sourceforge.net/projects/digeniusdisk)

DVB-T (terrestrial TV, optional)

In large areas of Europe, conventional terrestrial analogue TV has been replaced by a digital technology called DVB-T. Just like satellite TV, the reception of DVB-T also requires a receiver (also called "set-top box"). As an option, your digital CI receiver is equipped with this additional receiver and can hence include DVB-T channels in the channel list for playback. This requires a separate DVB-T antenna to be connected to the corresponding antenna port. We recommend the usage of a so-called active antenna with integrated amplifier for extended range. The power supply required by the active antenna is provided by the digital CI receiver. To activate the power supply, follow the path Menu → Main menu → Edit Settings → Reception and set the option "5-V antenna supply" to "On". Remember to save the changed setting (see page 36).

Different frequencies are used for terrestrial TV in the different regions. It is hence required to search for DVB-T channels whenever the location is changed (even within one country). Each region has its own TV stations. A channel list including all channels of all regions would hence be excessive. Therefore, it is useful to include only the channels in the channel list that can actually be received at a given location. To facilitate this, your digital CI receiver is equipped with a special **mobile search** for DVB-T channels. To start this search, press the **yellow** key. Upon confirming the search with OK, all previous and not applicable DVB-T channels will be deleted and a new DVB-T search is started. Please refer to the information in section on page 38.

Editing transponders/channels

The program menu (press MENU once) contains the two sub-menus "Edit Transponder" and "Edit Channel". These two sub-menus allow you to view and edit the settings required for the reception of the individual channels. Wrong entries at the individual positions may prevent the reception of one or more channels.

The automatic search function (see section "Search" on page 38) usually provides the correct settings automatically. Under certain conditions, you may input settings received e.g. from your broadcasting station to enable the reception of specific programs.

When the decoding function of the digital CI receiver is used, encrypted programs can only be decoded if the correct data is entered in the menu "Edit Transponder" under "Network ID" and "T.Stream ID". These settings must be checked and adjusted, if required, when the satellite's channel allocation is changed by the operators.

If an encrypted channel for which you have a valid smartcard cannot be decoded, select "Edit Transponder" and highlight "Network ID". Press LIST. Changed settings are now automatically corrected. In this case, the entry will change to green. Press EXIT and confirm the confirmation prompt with OK. Your channel list is now up to date and the encrypted program can be received.

Games

The option "Options" in the main menu contains two small games. The objective of the first game "Blocks" is to sort falling blocks in such a way that the field is filled as completely as possible. Whenever one line is completely filled, it disappears and the lines above move down. Points are awarded for each block which is sorted and each line which is eliminated. The game is over when there is no more space left to sort the blocks into.

The blocks are positioned with the keys on the remote control:

OK/CH▲	Block rotates counter-clockwise
–/VOL◀	Block moves to the left
+/VOL▶	Block moves to the right
P-/CH▼	Speed of falling block increases

In the second game "Snake", a forward-moving snake must be navigated through the game area for the longest possible time without colliding with obstacles, the edge of the game area or its own tail. Also, use the head of the snake to collect the "snacks" which appear occasionally. This will increase your points score and make the snake grow longer.

Use the keys on the remote control to control the snake:

P+/CH▲	Snake moves upward
–/VOL◀	Snake moves to the left
+/VOL▶	Snake moves to the right
P-/CH▼	Snake moves downward

Basic settings

The basic settings of the receiver are adjusted in the sub-menu "Edit Settings" of the main menu. To display this menu, press MENU twice.

Use keys +/- to change the options within the sub-menus of the Edit Settings menu.

If an option provides a selection from a list of values, this list can be displayed by pressing OK. Numerical values can be directly input with the number keys.

Please also observe the help screens displayed for the individual options.

Settings that have been changed since last saving the configuration are displayed in green.

Save the settings after completing the changes by selecting "Edit Settings", then "Save Settings" and then pressing OK. Wait until the menu disappears to ensure that the settings have been saved. This may take a few seconds.

Edit Settings → General Options

Timezone: Here you can set your time zone relative to GMT/UTC (Greenwich Mean Time, Universal Time Coordinated). This is necessary as the time transmitted by the stations is always based on UTC.

Summer time control: Here you can activate the automatic switch to daylight-saving time as per EC regulations.

OSD language: Here you can set your language. All information displayed on screen will then appear in the language selected. The change will only become active after you exit the menu.

Search encrypted: Here you can define whether or not the search function should also detect and display encrypted (coded) programs in the list. If no CI modules are used, this menu item can be set to off. Encrypted channels are then ignored by the search and the result is a more concise list.

Edit Settings → OSD/EPG

Status Time-out: This setting determines how long the status information for the current program is displayed on screen after a change of the channel.

Chan. Num. Timeout: This setting determines the period after which the channel is changed after an incomplete input of digits.

OSD Transparency: This setting facilitates the adjustment of the transparency of the on-screen displays, i.e. how clear the TV image can be seen through the on-screen display.

Edit Settings → Reception

5-V antenna supply: At systems with the +T option fitted, the power supply to the external DVB-T active antenna is activated here.

Mobile reception: This menu option allows the reception even of very weak signals and signals of severely erratic strength. This may be useful to receive DVB-T signals while driving (option +T required) or to receive very weak satellite signals at the limits of the satellite's footprint. Please note that severe interferences of picture and sound may occur when this option is activated.

Edit Settings → Satellite Systems

With this setting you can display a list of all currently known satellites in the right-hand column. The left-hand column shows the active satellites. Only the satellites included in the **left-hand column** can be received.

If you wish to change the list of active satellites, please observe the instructions displayed on screen.

Note that all satellites can be received as long as you do not change any settings. If you change any of the settings, the reception unlisted satellites will be suppressed.

The channel list will be updated as required when new satellites are installed in orbit. This list can be downloaded from the Internet and uploaded into the receiver by a computer. (see page 56).

Updated lists are available for download at www.ten-haaft.de/forum

Edit Settings → Signal Output

TV Screen: Here you can adjust your system to wide-screen television sets with a 16:9 aspect ratio. For mobile applications, sets with a 4:3 aspect ratio are primarily used.

RGB /YUV: This option allows the selection of the YUV composite signal as an alternative to the default RGB signal. The RGB or YUV signal is supplied to the SCART port and also to the correspondingly identified coloured Cinch jacks. Please refer to the operating manual of your TV set to determine which signal type is supported. The signal of the CVBS and Y/C ports and the FBAS signal at the SCART port are not affected by this setting.

Volume Bypass: This menu item deactivates the volume control. With the default setting "Off", the volume of the television set can be adjusted with the digital CI receiver's remote control.

Digital Audio: Here, you can select which digital audio formats are output via the SPDIF port. Please only select formats that are compatible with the audio devices connected. The selection of the audio format output to this port depends on the formats transmitted by the stations (e.g. Dolby 5.1). The desired audio channel can then be selected via the sub-channel selection (see page 21).

Edit Settings → Default settings

With this menu option you can restore the default settings of all general receiver functions. Confirm with OK.

The channel list will not be affected by a reset to the default settings.

The functions of the automatic satellite search are not affected, either.

Edit Settings → Save Settings

This option **must** always be selected to permanently save any changed settings of the other options.

If you do not select "Save Settings", the settings will be reset to the default values the next time you turn on the receiver.

Editing channel list

You can adjust the channel list of your receiver to your personal requirements. We suggest to group the channels by the satellites as with the default channel list.

Select the channel list editor within the option "Sort Channels" in the sub-menu "Channel list" in the main menu.

After completing your settings, exit the channel list with EXIT. Confirm the subsequent prompt with OK to save that channel list.

To change the entries, select an entry in the list by pressing OK. A menu with the available options will appear.

Select option "Block" in this menu if you wish to edit a complete block of sequential channels. The menu will then disappear and you will be prompted to highlight the end of the block in the list. Select the last entry of the block and press OK. The menu with the available options will then be displayed again.

The following functions are available within this menu:

Copy	Copies the channel to a different position in the channel list. The existing entry in the target position is overwritten.
Move	Moves the entry to a different position. **Note:** Moving an entry upward will insert it ahead of the target entry, moving it downward will insert it behind the target entry.
Delete	Deletes a channel from the channel list. The entry in the list will be marked as unused. The numbering of the remaining channels will remain unchanged.

Cut	Deletes a channel from the channel list. The subsequent entries are moved up to fill the free position. **Note:** To help keep the channels grouped in blocks, all of the channels move up together only as far as the next entry marked as "unused". If e. g. the list is not occupied between entry 85 and entry 99, you may delete entry 57, and only channels 57 to 84 will move up. The channels from 100 are not affected.
Insert blank	Inserts a blank entry. The subsequent channels are moved downward accordingly. **Note:** As with the option "Cut", this function determines areas with channels marked as "unused" as the end of a block.
Pack	This option is only available if you have highlighted a block. Within this block, all free positions marked "unused" are deleted by moving the channels upward. The unused entries are then positioned in sequence at the end of the block.

Functions utilizing a target entry will prompt you to select a target entry after the selection of the corresponding menu option. To do this, navigate to the entry in the list and confirm with OK.

You can cancel the preceding steps by pressing EXIT as long as you have not completed a function.

As an alternative to the direct editing of the channel list, a cache memory is available for the convenient execution of complex sorting procedures.

Further operating information concerning the individual functions will be displayed on screen.

The automatic search function of the receiver scans the individual satellites or, alternatively, the DVB-T channels for new channels. Channels already included in the channel list are automatically updated in case of any changes. Depending on the settings in "Edit Settings → General Options", encrypted channels may be ignored (see page 33).

When the mobile search is started, all DVB-T channels are first deleted from the channel list (see page 30).

4.4.2 Searching

1. Select the search function from the main menu option "Channel list/Channel search" in the sub-menu "Channel list" in the main menu.
2. Select the satellite from the list (or DVB-T) that you wish to search for new channels and confirm your selection with OK. Note that the antenna must be aimed at this satellite and that a signal must be received. To receive DVB-T signals, a suitable antenna must be connected.
3. Wait until the search has been completed. Technical details of the scanned channels and the number of channels found are displayed. A search may well take approx. 15 minutes.
4. After the search is completed, the channel-selection window will be displayed.

4.4.2 Channel-selection window

This window shows the channel list on the left-hand side and the new channels on the right-hand side. Press TV or RADIO to switch between the TV and radio channels. Use SWAP to switch between the lists. Several functions are available. To display these, highlight in the list the channel you wish to change, then press OK and select an option from the menu displayed.

If channel entries are inserted into the channel list, the selection will change into the left-hand window and you will be prompted to select the target entry from the list by pressing OK.

The following options are available for newly found channels (right-hand list):

Activate	Activates the new channel, if possible.
Copy above	Inserts the selected new channel above an existing channel list entry. This entry and the subsequent ones will be moved down the list to make space for the new entry.
Copy over	Copies the selected new channel over an entry in the channel list. The existing entry is overwritten.

The left-hand column shows the existing channel list. Press SWAP to switch over to the editing of this list. The following menu options are available:

Activate	Activates the selected channel.
Restore	This option prevents previously scanned channels from being updated. Previously scanned channels are marked green in the channel list.
Cut	Deletes a channel from the channel list. The subsequent channels are moved up to fill the free position.
Delete	Deletes a channel from the channel list. The entry in the list will be marked as unused. The numbering of the remaining channels will remain unchanged.

Saving the channel list

After inserting the new channels into the channel list according to your personal preferences, press EXIT. A dialog box will appear and you will be prompted to either save your changes with OK, cancel your changes with SWAP or to return to the channel selection window with EXIT.

If you decide to cancel your changes (SWAP), the original channel list will not be changed and all the changes will be lost.

Further information on the search function

Make yourself familiar with the search function and use it regularly. Digital television is a comparatively new technology, and new channels are added frequently. Also, the data of existing channels is subject to change. The search function automatically updates the internal channel list when you confirm the security prompt with "OK" when leaving the search function, even if you have not made any manual changes.

Signal-strength display

Within the sub-menu "Options" in the main menu you can select the signal strength display.

The signal strength is then indicated as a vertical bar. The C/N value will indicate the same value in dB. The higher the number, the better the reception quality. In satellite mode, and depending on the channel, a satisfactory TV picture should be received with any value above approx. 8. In DVB-T (optional) mode, a C/N value above approx. 15 will provide interference-free reception.

The three coloured fields next to the bar indicate the status of the receiver stages. Only if all three fields are green, will valid data be received with the signal and a picture be shown on screen.

Use P+/P- to change the selected program in the background. Press INFO to display an enlarged version of the C/N-value window.

Note: Further to the setting of your reception system and your position within the satellite's footprint, the signal strength also depends on the currently selected channel. Please take this into account when checking the aim of your antenna using the signal strength display. It is normal that some channels are received with a strong signal while others are rather weak.

Note: The same display appears in menu "Oyster/CARO/Cosmo Digital → Manual search" and menu "Edit Transponder".

Operation with additional satellite receiver

If you wish to use the same antenna for a second satellite receiver in addition to your digital CI receiver, loop the signal from the SAT OUT socket of the digital CI receiver (not present at all models, technical changes reserved) to the antenna input of the second receiver.

To ensure that such a setup works properly, the antenna must only be controlled by one of the receivers at any time. To ensure this, the receiver currently not in use must be switched off. For the digital CI receiver, it is recommended to switch it into **AV mode** (AV key). This will keep the internal amplifier switched on and provide a stronger signal to the second receiver.

To ensure that the automatic satellite search function of the Oyster/CARO/Cosmo digital CI unit works reliably, the search process must not be affected by signal interference. During the automatic search or the search via location, the second receiver must therefore always be switched off.

Note: Simultaneous reception with both receivers is not possible!

The Oyster system can be equipped with a twin LNB. With this option, a special LNB with two outputs is installed at the Oyster's antenna unit and two antenna cables are routed. The second antenna cable can then be used to feed a second receiver or e.g. a notebook computer with a DVB-S receiver module.

Functions of the satellite system

To access the menu of the Oyster/CARO/Cosmo system, press MENU and P+/P– to select "Oyster/CARO/Cosmo Digital". Press OK to open the menu.

To select the individual menu items, use P+/P- and confirm with OK as usual. All search functions and the required settings are controlled via the Oyster/CARO/Cosmo Digital menu. To enhance your operating convenience, many functions are performed automatically.

For example, the antenna is automatically opened and moved into the previous reception position any time you switch on the system. If no image is received in this position, the automatic search function is started. Ensure that the moving antenna cannot cause harm to any person before switching on the system.

When the system is switched off with the red stand-by key ⏻ or the keys at the satellite mouse, the antenna is automatically retracted. The antenna is also retracted when you switch on the ignition of your vehicle to start the engine. The antenna retracts in only a few seconds. Never drive off before the antenna is fully retracted and the receiver has been switched off.

Before driving off, always perform a visual check of the vehicle roof to ensure that the antenna is correctly retracted into its park position. The indicator must only show a green stand-by dot or must be completely blank, depending on the settings.

Please note that by switching off the master switch, the system is completely disconnected from the vehicle's electrical system and that the antenna will hence not be able to retract automatically.

Please also note that the system can only be switched back from the power-saving stand-by mode by pressing both keys of the satellite mouse simultaneously. If you suspect a malfunction of your system, then first press both keys of the satellite mouse.

Automatic search

The selection of this menu option starts the automatic search, which is otherwise started if no signals are received in the last reception position, e. g. after the vehicle has been moved. The satellite search is carried out

in accordance with the 'Last Elevation Memory' (LEM) principle and begins with the angle of the last receiving position. The receivable satellite can usually be found quite quickly provided the distance between old and new location is not too great.

However, if a larger distance has been covered, it is generally advisable to select "Search via location" to shorten the search time.

The automatic search function always assumes that your vehicle is perfectly level. If this is not the case the search time may be extended.

The satellite used for the automatic search can be pre-set under **Oyster/CARO/Cosmo Digital ... → Edit Settings → Search satellite**.

Search via location
If this menu item is selected, a sub-menu containing different countries or regions appears. Use P+/P– (by line) or +/– (by page) to select an entry and confirm with OK.

The regionally applicable elevations are now allocated to the receivable satellites. Satellites may now be found more quickly. This search option is especially convenient if you have travelled a greater distance from your last location.

If you have pre-set a satellite under **Oyster/CARO/Cosmo Digital ... → Edit Settings → Search satellite** which cannot be received at the current location, the system will automatically select a satellite as search satellite that should generally be receivable at the current location (usually Eutelsat Hotbird).

The satellite actually used for the search will be shown on screen. After the satellite has been found, the system automatically switches to a channel that is transmitted via this satellite.

Please note that not all satellites and all channels can be received in all locations. Reception also depends on the size of the antenna. If you are not sure whether your pre-set satellite can actually be received in your current location, use the "Search via location" function. In this case the satellite system will automatically select a receivable satellite.

Manual search

By selecting this menu option you open a menu that allows the manual control and adjustment of your satellite system. Before selecting this menu item, switch to a channel that is receivable at your current location, as otherwise no picture can be received. (See appendix 'Channel list' and appendix 'Search satellite' on page 58.)

The manual search is recommended if you wish to optimize the antenna position or aim the antenna at new satellites. The menu displays the rotation and elevation in degrees relative to your vehicle and the signal strength. The strongest signal will provide the best picture quality. However, signal strength varies with the channel and location. To receive an image, the signal strength window must display three green indicators (DVB, FEC and QPSK) and a C/N value of at least 7 (C/N 8 for encrypted channels).

To move the antenna, use P+/P- to highlight the option "Azimuth" (rotation, direction) or "Elevation" (angle). Use the +/- keys to move the antenna in increments into the selected direction. The change of the antenna direction will be displayed in the direction indication window. Please note that the indicated directional values relate to your vehicle and are not actual geographic degrees – i.e. previous values are invalid after you have moved the vehicle!

If you wish to move the antenna over a greater range, the increments can be increased. To increase the increments, highlight "Azimuth" or "Elevation" and press key 1 to 9 of the remote control. The increment range will be displayed in the direction indication window following the degree value. The highest number will create the largest increment. In order to fine-tune a position, use increments of 1 or 2.

Select "Store Position" and press OK to store the current position. The current position is stored immediately. If you switch off the system now or retract the antenna, it will return to this position the next time the system is switched on. Accordingly, if you were receiving a picture when you activated the function "Store Position" and you have not moved the vehicle since, you will again receive a picture only seconds after switching the system back on.

From the menu "Manual search" you can also retract the antenna at any time. Highlight "Retract" and press OK. The antenna retracts, its movement is displayed in the direction indicator window. At an elevation of approx. –73° the antenna is fully retracted, but the system will not yet switch off. To return the antenna to its stored position, select "Last Position" and press OK. This function is useful to manually open a previously retracted antenna.

When a DVB-T (optional) channel has been selected, an optimization of the satellite antenna is not required. DVB-T is received by a separate antenna. A corresponding message is hence displayed when the manual search is started while a DVB-T channel is active.

Press EXIT at any time if you wish to exit the "Manual search" menu. If the antenna is still moving while the menu is being exited, the antenna is stopped.

Retraction and switch-off

This function retracts the antenna and switches the receiver into stand-by.

This function is also performed by pressing the red stand-by key ⏻ on the remote control or by simultaneously holding down both keys of the satellite mouse.

If in Oyster/CARO/Cosmo Digital ... → Edit Settings → Stand-by the option "Comfortable" is selected, the stand-by mode is indicated by a green dot in the satellite mouse' display (see page 49).

Retracting (optional)

This menu item is only available with models with a hard-disk (HD) or DVB-T tuner (+T). If this item is selected, the antenna is retracted without switching the system into stand-by. You may now use either the playback function of your PVR or watch DVB-T TV channels.

Edit Settings

With this menu, you can change several settings concerning the operation of the satellite system. Here, all settings concerning the automatic search are made.

Settings concerning general receiver functions are performed in Menu → Main menu → Edit settings (see page 33).

The following settings of your satellite system can be edited:

Stand-by mode: When the system is set to "Comfortable", it can be re-activated from stand-by mode by pressing the red key on the remote control. The stand-by mode is indicated by a green dot or hyphen in the satellite-mouse display.

When the system is set to "Energy Save", the remote-control receiver and the green dot are switched off when the system is switched into stand-by mode. In this case, the system cannot be switched back on with the remote control. To switch the system back on, press both keys of the satellite mouse (LED display) simultaneously.

LED display upside down: If set to "Yes", the channel number will be displayed bottom-up. This is useful if the satellite mouse is mounted with the keys facing downward. Channel numbers are then seen in their normal position.

The setting "No" must be used when the satellite mouse is mounted in the "normal" direction.

Sleeptimer: When in stand-by mode, the antenna will be retracted and switched off when the sleep-timer is activated. When set to "Sleep mode", the system is switched into the sleep mode by the sleep-timer without retracting the antenna (see page 11).

The regular timer programs (see page 24) are only executed in sleep mode and are inactive in stand-by.

Activate top box: When the system is switched on, the top box (antenna unit) is usually activated immediately and the antenna is being aimed at the satellite. To prevent this, set this menu item to "Off". This may be useful if you are in a location where no satellites can be received but you do wish to use the PVR or +T (optional) functions.

The antenna unit can be activated at any later point by selecting "Oyster/CARO/Cosmo Digital ..." and then "Activate antenna" (Antenne aktivieren).

Search satellite: This option allows the selection of the satellite that the system is to search for when being switched on or when the automatic search or the search by location is initiated. Several satellites covering different regions and offering programs in different languages are available. Please note that not all satellites can be received in all locations. (See appendix 'Search satellites' on page 58)

Search transponder / beam: Some satellites have several different footprints. As a consequence, not all channels of a satellite can be received within the satellite's overall coverage area. Also, it may be possible that the automatic search will not yield a satellite when a different footprint is selected for reference. With this menu item, a footprint suitable for your location can be allocated to each satellite in accordance with the specifications of the satellite operator.

Automat. satellite-swap: When set to "Active", the system will check at every program change whether the new program selected can also be received from a satellite other than the current one. If such a satellite change is recognized, the system will automatically adjust to the new satellite.

To deactivate the automatic satellite-swap, set the setting to "Off". This may be necessary if the automatic satellite-swap does not function because of weak signals or if you prefer to perform a manual search (see "Automatic satellite-swap" on page 50).

Reset search parameters: Select this menu item and confirm it with OK when you assume that your satellite system does no longer reliably find the selected satellite via the automatic search or the search via location. The satellite search function is reset to the default settings. Please note that the first search after a parameter reset may take quite a long time. This function should hence only be used after due consideration.

Automatic satellite-swap

Your satellite system will switch between all satellites receivable at your location without any user interaction.

The satellites broadcasting the channels are stored together with the channel position in the channel list (see appendix 'Channel list' on page 60). If the satellite system recognizes a satellite change after you have changed the channel, the antenna will immediately search for this satellite and precisely adjust itself to its signal. During this process **"Antenna is being moved"** is shown in the display.

If the selected channel cannot be found on the new satellite (e. g. due to an interruption of transmission or your location being out of range), the antenna will return to the position of the satellite from which the search was started and will switch back to one of the channels from this satellite.

The time required for such a change depends on how far the two satellite positions are apart. For example, the change from Astra 1 to Hotbird takes less than 5 seconds if the satellite positions are known. If the exact positions are not known, the first change will take a little longer.

You may cancel this function at any time by pressing **SWAP** while the system is searching for the new satellite. In this case the system reverts to the previous channel.

This function requires the setting "**Active**" in Oyster/CARO/Cosmo Digital ... → Edit Settings → Automatic satellite-swap. To perform a manual search, the function "Automatic satellite-swap" must be set to "Off" in the "Edit Settings" menu, as otherwise the system will always return a known satellite in order to receive a picture.

Reception in remote areas

State-of-the art digital technology can considerably enlarge the area in which a satellite can be received.

Most satellites broadcasting channels of interest to Central European viewers are aimed at Central Europe. In locations outside this area, the antenna has a lateral "view" on the satellite. This effect is known as the "skew angle" or "polarization angle" and occurs particularly in southern regions such as Portugal, Spain, Morocco, Greece, Turkey, and most extremely on the Canary Islands.

This effect is mostly compensated by the receiver's electronics, but sometimes requires some manual fine-tuning by pivoting the LNB (reception head) or the complete flat-panel antenna by some degrees.

The following definitions apply to the following tables and angles:

To determine the sense of rotation, the viewer looks towards the satellite from the perspective of the antenna. Accordingly, the viewer is located behind the antenna or at its side. Depending on the antenna model, either the LNB in front of the antenna dish (Oyster), the LNB within the antenna (Cosmo) or the complete antenna (Caro) must be turned.

Rotations in CLOCKWISE direction are negative (–).

Rotations in COUNTERCLOCKWISE direction are positive (+).

A rotation in "+" direction hence means that the BOTTOM of the LNB or antenna is turned to the RIGHT.

A rotation in "–" direction hence means that the BOTTOM of the LNB or antenna is turned to the LEFT.

LNB settings in different regions

The values stated are for reference only!	Astra I 19.2° east	Hotbird 13° east	Astra II 28.2° east
Germany and neighbouring countries	0°	0°	+ 8°
Southern Spain, Gibraltar	+16°	+10°	+25°
Portugal	+23°	+16°	+30°
Morocco	+20°	+12°	+28°
Canary Islands	+36°	+30°	+42°
Sicily, Libya, Tunisia	+ 5°	0°	+10°
Greece	-12°	-20°	0°
Turkey, Ukraine, Belarus	-15°	-17°	---
Near East	---	-35°	---
Scandinavia	0°	0°	0°
England, Ireland	+10°	+5°	+14°

Adjustments of less than 8° are usually not required as long as reception is undisturbed.

The fine-tuning of the skew angle often allows the reception of satellites in areas actually outside of their footprint.

The footprints of the individual satellites can be found at **www.lyngsat.com** or **www.satcodx.com**. Both websites provide interesting information about the channels and footprints of the various satellites.

The Oyster digital system is also available with the optional "SKEW" function which can also be retrofitted. This function automatically adjusts the LNB so that no manual adjustment is required.

Fault codes

Malfunctions of the automatic antenna unit may occur e. g. when the antenna's motion is obstructed by branches or snow.

Such malfunctions are automatically detected and will be displayed by the satellite mouse as fault codes.

Code	Malfunction	Remedial action
E 01	The search did not yield the reception of a satellite.	Change your location. Do you have a clear view to the South? Are you within the 'footprint' (range) of a satellite?
E 02 E 03	Antenna rotation (E02) or elevation (E03) motion is blocked.	Is the motion obstructed by obstacles? Is the supply voltage insufficient (weak battery)?
E 04	Antenna does not fully retract and switch off.	Press EXIT to re-open the antenna. Remove snow, leaves or other items from the antenna. DO NOT switch off the system by setting the master switch to OFF before having eliminated the cause of the malfunction.
E 05 E 06	Antenna does not react after activation or does not react to commands.	Is the red fuse (10 A) at the receiver in order? Are all cables correctly connected? Contacts of the control cable may be slightly oxidized. Disconnect and reconnect the cable.
E 07 E 09	Short-circuit/open circuit in antenna cable or at antenna.	Check the white antenna cable and the connectors at the receiver and at the LNB.
E 08	No or insufficient voltage for antenna unit.	Check fuses on the rear of the receiver.

E 10 E 11 E 12	Caution: The supply voltage drops considerably during the rotation of the antenna.	Recharge the battery as soon as possible. Check the wiring and the connection of the system to the voltage supply. Observe the information in the Installation Instructions!
E14 E 15	Incorrect feedback from antenna unit.	An incompatible antenna unit is connected. The power relay of the antenna unit does not hold or the contacts are contaminated or defective (relay fault). Potentially strong switch transients of the power supply (external supply by charge controllers or interferences from TV sets).
E 16	Incorrect model configuration.	Error occurred during model configuration. An update may have been performed incorrectly. The system must be serviced by the manufacturer.
E 17	Re-Init activated.	Corrupt memory detected. The faults were corrected. Switch the system off and back on. You may have to change some settings (e. g. search satellite).
E 18	Limit switch/mechanical fault	A fault in the antenna unit has been detected. Icing may be the cause. Please contact the service department.
E 19	Hardware fault (possibly in conjunction with OSD message)	The automatic self-test revealed a hardware fault. Do not operate the system any more, further damage may occur. The system must be returned to the service department.

RS232 interface

The serial RS232 interface is used to connect the receiver to a computer. On our website at www.ten-haaft.de you will find programs to support this functionality. You can download updates of the operating software and up-to-date channel lists that may resolve technical problems or provide new functions or channels.

Never use any other software updates than those provided on our website at www.ten-haaft.de. The usage of any third-party software update or software not released for your system variant may cause damage to your satellite system and may render your warranty invalid.

The connection of the receiver to a PC requires a serial cable with a 1:1 pin allocation, i. e. hard-wired pins. The PC-side of the cable must have a 9 or 25-pin D-SUB connector, depending on the serial port of your PC. The receiver-side of the cable requires a 9-pin D-SUB connector. Extension cables for mice are configured accordingly and can hence be used.

The pins of the receiver port are assigned as follows:

1, 4, 6 – 9	not assigned
2	TXD
3	RXD
5	GND

Receiver data

Front end (IF unit)

Input frequency range	950....2150 MHz
Input level range	-65....-25 dBm at 75 Ohm
Input socket	F standard, female
Output (loop-through) socket	F standard, female (optional)

Signal decoder

Supported symbol rates	> 15000 MSym/sec
FEC	Viterbi, all current rates
Signal format	MCPC-DVB-S MPEG2 TS
CI decoding standard	by CAM plug-in modules

Audio/Video part

Video output signal	FBAS, Y/C, RGB or YUV
Audio output signal	Stereo via SCART or Cinch
Audio output level	adjustable or fixed at 0 dB
Digital audio	SPDIF Cinch (PCM, AC3, dts)

Outputs

Audio / Video	Euro SCART, Cinch, Hosiden
HF modulator	DIN / IEC channel 32 (UHF)

Other data

Operating voltage	12 V or 24 V (11 V to 30 V) DC
Power consumption of "CI"	approx. 11 W (incl. 1 CI module)
Power consumption of "CI+T"	approx. 12 W (incl. 1 CI module)
Power cons. of "HDCI+T"	approx. 15 W (during HD rec.)
Power cons. during sat. scan	approx. 36 W / max. 72 W
Weight	11 – 15 kg (depending on model)
Dimensions (WxHxD, in mm)	approx. 275 x 75 x 160

Subject to change without notice.

Appendix – Search satellites

These satellites are pre-set in your satellite system for direct searching. To select, navigate to **Oyster/CARO/Cosmo Digital ... → Edit Settings → Search satellite** (See page 50).

Several other satellites also transmit channels complying with the DVB standard. These satellites however transmit only a limited scope of sometimes frequently changing programs. Their sometimes weak signals do not ensure a reliable mobile reception. These satellites can be received using the "Automatic satellite-swap" function (see page 50).

ASTRA 1

Astra 1 primarily serves the German-speaking regions of Europe. It features more than 50 free-to-air programs in German language, including all major privately owned stations, stations under public law, their "third channels" and numerous radio programs.

Reception in Turkey, the Eastern Mediterranean and Eastern Europe is however poor or unavailable. With an 85-cm antenna, reception is however usually available even on the Canary Islands, in Morocco and in Greece.

ASTRA 2

Astra 2 primarily covers the English-speaking regions of Europe. It transmits the popular English-language news channels. The footprint is even larger than that of Astra 1, but the reception area is split into a northern and a southern zone. The full range of channels is only available in Central Europe. Free-to-air channels of the BBC and ITV can only be reliably received in Great Britain and Ireland, France, Benelux and the western areas of Germany.

HOTBIRD ("Eutelsat Hotbird")
Like Astra, Hotbird is not a single satellite, but a system comprising several satellites. It transmits more than 200 digital free-to-air programs in several languages. Hotbird fully covers all of Europe, but at sometimes significantly lower signal levels than Astra. Hotbird is the easiest way to receive German stations in Greece and Turkey.

THOR
The channels and the footprint of Thor cover northern Europe. Many, sometimes all, channels of Thor may be received even in southern Germany if an adequately sized antenna is used. Almost all channels of Thor are encrypted, though.

SIRIUS
Like Thor, Sirius serves the Scandinavian region. However, a small range of its channels can be received almost all over Europe.

ATLANTIC BIRD 3
Atlantic Bird 3 mainly covers France and Benelux, but can also be received all over Europe if a suitable parabolic antenna is used. It transmits several digital free-to-air French channels.

HISPASAT
Hispasat covers mainly the Iberian Peninsula and the Canary Islands, but can also be received in Italy, France, Benelux etc. in good quality. The range of programs is focused on the Spanish region.

EUTELSAT W3A
This satellite has the largest footprint of all. It covers the whole of Europe and the Middle East region. However, its signals are significantly weaker than those of the other satellites, and the use of an 85-cm antenna is hence recommended.

Appendix – Channel list (TV stations)

In the original channel list (TV), the programs are allocated to the individual satellites as follows:

Astra 1 19.2° E	CH 001 to CH 499
Hotbird 13° E	CH 500 to CH 999
Astra 2 28.2° E	CH 1000 to CH 1199
Thor/Intelsat 1° W	CH 1200 to CH 1399
Sirius 5° E	CH 1400 to CH 1499
Astra 3 23.5° E	CH 1500 to CH 1554
AtlanticBird 3 5° W	CH 1555 to CH 1599
AtlanticBird 2 8° W	CH 1600 to CH 1649
Eutelsat W3A 7° E	CH 1650 to CH 1699
Eutelsat W2 10° E	CH 1700 to CH 1749
Hispasat 30° W	CH 1800 to CH 2124
Astra 1 (prog. for Iber. Pen.)	CH 2125 to CH 2299
Arabsat (Badr 3) 26° E	CH 2300 to CH 2349
HellasSat 39° E	CH 2350 to CH 2399
Amos 4° W	CH 2400 to CH 2429
Telstar 12 15° W	CH 2450 to CH 2475

(Channel list is subject to change without notice.)

Please note that not all program numbers are occupied by a station. Many numbers are kept blank for further system extensions. Stations frequently stop the transmission of individual programs.
You can sort the channel list to your personal taste and you can update the list with new channels with the search function at any time. The system function will not be affected.

New channel lists downloaded from www.ten-Haaft.de may be sorted and formatted in a different manner than the list originally stored in the receiver. Such changes may be required in the future to allow the update of the list with new satellites.

Appendix – TV channels

At the factory, your digital CI receiver has been programmed with the following channels(CH 1000 – CH 1185), for example:

ASTRA 2

1000	ITV1 Central SW
1001	ITV2+1
1002	ITV3+1
1003	ITV Play
1004	Travel Channel
1014	TBN Europe
1025	EuroNews
1041	QVC
1044	Best Direct
1058	Golf Pro Shop
1060	BBC 1 London
1061	BBC 1 East
1062	BBC 1 East
1063	BBC 1 West
1064	BBC 1 W Mids

1065	BBC 1 N West
1066	BBC 1 NE & C
1067	BBC 1 South
1068	BBC 1 S East
1069	BBC 1 S West
1070	BBC 1 E Mids
1071	BBC 1 Scotland
1071	BBC 1 Wales
1073	BBC 1 York
1074	BBC 1 N1
1075	BBC 1 Oxford
1076	BBC 1 C1
1077	BBC 1 Yrks&Lin
1078	BBC 2 England
1079	BBC 2 Scotland

1080	BBC 2W
1081	BBC 2 NI
1082	BBC TES 3
1083	CBeebies
1084	CBBC Channel
1085	BBC NEWS 24
1105	Golf Channel
1130	Real Estate TV
1155	ITV1 London
1156	ITV1 Central S
1157	ITV1 Central E
1158	ITV1 Central W
1159	ITV1 W Country
1160	ITV1 Wales
1161	ITV1 West

Please note that due to changes of the channel assignments of the satellites this pre-set list is subject to change at any time.

Appendix – Encrypted programs (CI)

The following encrypted programs are pre-set in the factory:

ORF (Austria)	CH 100 to CH 117	(Astra 1)
Premiere World (Germany)	CH 120 to CH 170	(Astra 1)
Arena	CH 175 to CH 190	(Astra 1)
Canal+ (Netherlands)	CH 200 to CH 223	(Astra 1)
TV Vlaanderen (Belgium)	CH 225 to CH 234	(Astra 1)
SRG (Switzerland)	CH 685 to CH 694	(Hotbird)

Further program packages and channels can be searched at any time using the search function (see page 38) and can be stored at program positions of your choice.

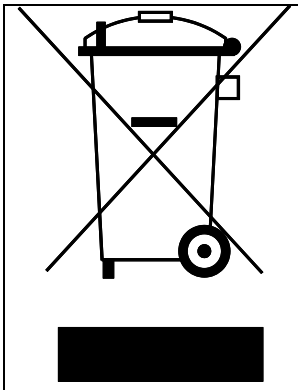
Please note that the reception of encrypted programs requires the corresponding CI module and a valid access card supplied by the program provider. Please contact the relevant program provider for more information. The program providers will also provide details about the type and source of the CI modules required.

Always contact the program provider directly if you require any information about encrypted program packages or if you have technical queries.

For licensing reasons, many program packages may only be received in their country of origin. Accurate information can therefore only be obtained from the program providers.

Caution: To avoid damage to your digital CI receiver and your CI module, only use original access cards provided by the corresponding program providers!

Notes on protection of the environment



At the end of its lifecycle, this product must not be disposed of with your normal waste, but instead must be returned to a recycling facility for electric and electronic devices. This is indicated by the symbol on the product, the operating manual or the packaging.

The materials can be reused in accordance with their identification. By reusing or recycling old equipment or making use of it in other ways you are making an important contribution to protecting our environment.

Please contact your local council to find out where your nearest disposal facility is.

The Oyster/CARO/Cosmo Digital CI satellite reception system is certified and intended for use as an accessory of a motor vehicle. The system may be disposed of together with the vehicle in accordance with the EC End-of-Life Vehicle Directive ELV, 2000/53/EC. The system does not contain any materials rated as hazardous to the environment according to the directive.

Contact and service

If you have any questions about using your satellite reception system, please feel free to call us:

Phone: +49 (0) 72 37 – 48 55 – 0

We are available: Monday – Friday from 07:30 a.m. – 5:30 p.m.

We hope you get a lot of enjoyment out of your fully automatic satellite system from ten Haaft.

ten Haaft GmbH

www.ten-haaft.de

E-mail: info@ten-haaft.de